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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,781	11/29/2001	Yukihiro Abiko	826.1773	1698

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EXAMINER

REKSTAD, ERICK J

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/995,781

Applicant(s)

ABIKO ET AL.

Examiner

Erick Rekstad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8, 10-12 and 19-21 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 13-18 and 22-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This is a Final Action for application no. 09/995,781 in response to the Amendment filed on May 16, 2005 wherein claims 1-24 are presented for examination.

#### ***Response to Arguments***

Applicant's arguments filed May 16, 2005 have been fully considered but they are not persuasive.

The Applicant argues that Meng and Kazui do not teach the limitation "only for a frame within a frame group which satisfies a condition that a forward prediction motion vector and a backward prediction motion vector in consecutive frames are small". This limitation is not provided in the specification wherein any prediction motion vector and any backward prediction motion vector is tested over consecutive frames to determine if the vectors are small.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-7,9,13-18 and 22-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The independent claims

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1, 15 and 24 state 'parameters only for a frame within a frame group which satisfies a condition that a forward prediction motion vector and a backward prediction motion vector in consecutive frames are small'. This feature was unable to be found in the disclosure. Claims 2-7, 9, 13, 14, 16-18, 22 and 23 are dependent on one of the above independent claims and are therefore rejected as well.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by 'Scene Change Detection in a MPEG Compressed Video Sequence' by Meng et al.  
[claim 15]

As best understood by the examiner, Meng teaches the method of a scene change detection algorithm in Figure 7. The algorithm contains the steps of:

(a) collecting first information about a motion vector for each frame from moving image data which is compressed with inter-frame prediction encoding (Parsing and Statistical Stage). Note, the first information deals with motion vectors.

(b) collecting second information about a correlation with a preceding/succeeding frame without decoding an image of each frame (Parsing and Statistical Stage). Note, the second information deals with DCT variance.

(c) calculating a value of an evaluation function which includes the first and the second information as parameters (Detection Stage).

(d) determining a scene change by making a comparison between the calculated value of the evaluation function and a threshold value (Detection and Decision Stages) (Pages 16-19 Section 4. Direct Scene Change Detection in a MPEG bitstream).

[claim 22]

Meng teaches the first information is the number and magnitudes of motion vectors (Pages 17-18, Sections 4.1.2 and 4.2), whereas the second information is a square measure of a region having a low correlation with a preceding/succeeding frame (Page 17 Section 4.1.1, Page 20 Section 5.2).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 4, 7, 13, 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng.

[claims 1, 23 and 24]

As best understood by the examiner, Meng teaches the algorithm as shown in Figure 7. Meng further teaches the use of the method with an MPEG2 codec implemented in C language. Meng further teaches a user interface for the algorithm as

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shown in Figure 9 (Page 24 Section 9). Meng further teaches the use of the codec in a multimedia server (Page 14 Section 1). It would have been obvious to one of ordinary skill in the art at the time of the invention that the algorithm is performed in the multimedia server device as required by claim 1. It would have been obvious to one of ordinary skill in the art at the time of the invention that the C code for the algorithm would be stored on the hard drive or other computer-readable storage medium of the server, as required by claim 16, as this is well known in the art (OFFICIAL NOTICE). It would have been obvious to one of ordinary skill in the art at the time of the invention that the multimedia server is a means for performing the information collecting, evaluation function and scene change determining as required by claim 24 (Official Notice).

[claims 2, 7 and 16]

Meng teaches the use of a window threshold which determines a threshold using a window of values of frames (Page 18-19 Section 4.3). The values are obtained in the information collecting means. Further, the threshold is adjusted based on the incoming values as required by claim 7. By the operation of the threshold window and the information collecting means a scene change interval is obtained as each frame between scene changes is processed.

[claims 3 and 4]

Meng teaches the comparing of several of the first and second information values in a scene change interval by the scene change determining means (Page 18-19 Section 4.3, Fig. 3). Meng does not specifically teach the storage of the values. It

would have been obvious to one of ordinary skill in the art at the time of the invention that in order to perform the scene detection method of Meng the values would have to be stored in a information storage means (Official Notice).

[claim 13]

Meng teaches the use of the magnitude and number of motion vectors for a frame (Page 17-18 Sections 4.1.2 and 4.2). Meng further teaches the use of a square measure for determining a dissolve scene change (Page 17 Section 4.1.1, Page 20 Section 5.2). As shown in Figure 7, these values are obtained in the information collecting stage.

Claims 5, 6, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng as applied to claims 1 and 15 above, and further in view of US Patent 5,168,356 to Acampora et al.

[Claims 5, 6, 17 and 18]

As shown above, Meng teaches the MPEG codec device and method of claims 1 and 15. The codec uses the motion vectors and DCT values to determine a scene change. Meng does not teach the layout of the bitstream. As shown in Figure 3A, Acampora teaches an MPEG like bitstream in which the motion vectors (MV) are stored separate from the DCT information (DC and AC) (Col 3 Line 51-Col 4 Line 61). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the bitstream of Acampora with the MPED codec of Meng as the bitstream is MPEG like.

Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng as applied to claim 1 above, and further in view of US Patent 5,642,174 to Kazui et al.

[claim 9]

Meng teaches the device of claim 1. Meng further teaches the detection of a scene change in a B frame using the ratio of forward predicted macroblocks to backwards predicted macroblocks (Page 18 Section 4.2). Meng does not teach the information collecting means outputting the number of bidirectionally predicted regions to the evaluation function. Kazui teaches a similar scene change detection process for B frames (Col 6 Lines 33-45). Kazui further teaches the information collecting means (counting means) counts the number of forward predicted, backward predicted and bidirectional predicted macroblocks. The counts are then sent to the evaluation means (scene change decision unit) (Col 4 Line 39-Col 5 Line 6). As shown in Figure 7, Kazui teaches the use of the bidirectional predicted macroblocks for determining a scene change (Col 5 Line 56-Col 6 Line 29). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the counting means of Kazui with the scene change detection means of Meng in order to obtain the number of forward and backward predicted macroblocks.

[claim 14]

As shown above for claim 9, Meng teaches the detection of a scene change based on the number of forward and backward predicted macroblocks. Meng further teaches that the scene change is detected when the ratio of forward to backward



predicted macroblocks is above a threshold. The threshold is determined based on a window of values (Page 18-19 Section 4.3). Kazui teaches a similar scene change detection process for B frames (Col 6 Lines 33-45). Kazui further teaches the information collecting means (counting means) counts the number of forward predicted, backward predicted and bidirectional predicted macroblocks. The counts are then sent to the evaluation means (scene change decision unit) (Col 4 Line 39-Col 5 Line 6). As shown in Figure 7, Kazui teaches the use of the bidirectional predicted macroblocks for determining a scene change. The scene change is based on the correlation between frames (Col 5 Line 56-Col 6 Line 29). It would have been obvious to one of ordinary skill in the art at the time of the invention that the device of Meng determines the threshold based on the appearance cycle (types of motion vectors) as required by claim 14.

#### ***Allowable Subject Matter***

Claims 8 and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 19-21 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The claims pertain to a novel process for an image processing device that the examiner was unable to find in several prior art searches.

'Scene Change Detection in a MPEG Compressed Video Sequence' by Meng et al. teaches a Scene change detection process. Meng does not teach the evaluation function being performed only for a frame within a frame group which satisfies a condition that the numbers of bidirectionally predicted regions in consecutive frames are small. This feature taken with the others in the claims define over the prior art.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick Rekstad whose telephone number is 571-272-7338. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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